



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
PACIFIC OCEAN DIVISION, U.S. ARMY CORPS OF ENGINEERS  
FORT SHAFTER, HAWAII 96858-5440

CEPOD-PDC

16 NOV 2012

MEMORANDUM FOR COMMANDER ALASKA ENGINEER DISTRICT (CEPOA-PM-C/DAVID WILLIAMS), P.O. BOX 6898, JBER, AK 99506-0898

SUBJECT: Review Plan Approval for the Yakutat Watershed, Yakutat, Alaska, Feasibility Study.

1. References:

a. Engineering Circular 1165-2-209, Civil Works Review Policy, 31 January 2010, and Change 1, 31 January 2012.

b. Review Plan for the Yakutat Watershed, Yakutat, Alaska, Feasibility Study, Alaska District, U.S. Army Corps of Engineers.

2. IAW reference 1.a., the enclosed Review Plan (reference 1.b.) was coordinated with the Flood Risk Management Planning Center of Expertise (FRM-PCX) in the South Pacific Division, which is the lead office to execute this Review Plan. For further information, contact the FRM-PCX at 415-503-6852. The Review Plan states that the need to do a Type I Independent External Peer Review will be determined later when more data is available.

3. I approve this Review Plan. It is subject to change as circumstances require, consistent with project development under the Project Management Business Process. Subsequent significant revisions to this Review Plan or its execution will require new written approval from this office.

4. The point of contact for this memorandum is Mr. Russell Iwamura, Senior Economist, Civil Works Integration Division, at 808-835-4625 or email [Russell.K.Iwamura@usace.army.mil](mailto:Russell.K.Iwamura@usace.army.mil).

Encl

GREGORY J. GUNTER  
Colonel, EN  
Acting Commander

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# **REVIEW PLAN**

## **Yakutat Watershed Feasibility Study**

**Alaska District**

**MSC Approval Date: 16 Nov 2012**

**Last Revision Date: 02 Nov 2012**



**US Army Corps  
of Engineers ®**

## REVIEW PLAN

### Yakutat Watershed, Alaska Feasibility Report

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## 1. PURPOSE AND REQUIREMENTS

**a. Purpose.** This Review Plan defines the scope and level of peer review for the Yakutat Watershed Feasibility Report, Yakutat, Alaska.

### **b. References**

- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2012
- (2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
- (3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- (4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
- (5) Feasibility Study Yakutat, Alaska Project Management Plan, July 2012
- (6) CEPOA-QMP-001, Alaska District Quality Management Plan, May 2012
- (7) CEPOA-7.3-11 Study Quality Management, 15 Jul 2011
- (8) CEPOA-7.3-1-WI-09, Civil Works Review Policy Roll Out Brief, 16 Jul 2012
- (9) CEPOA-7.3-4 Independent Technical Review/Design Review, 06 Sep 2012

**c. Requirements.** This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-209), planning model certification/approval (per EC 1105-2-412), the Project Management Plan as required by EC 1165-2-209, and the Value Management Plan requirements in the PMBP REF 8023G and the ER 11-1-321, Change 1. This review plan was drafted based upon a template for decision document review plans dated 15 Jun 2011.

## 2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the decision document. The RMO for the peer review effort described in this Review Plan is the flood risk management (FRM) PCX. The RMO Coordinator is currently the Alaska District (POA) Point

of Contact (POC) for the FRM PCX, but will later be the Omaha District (NWO) POC following consolidation of the FRM PCX Coordinators. The possibility exists that other centers may be required to participate in reviews, including the Risk Management Center (RMC) if threat to life is a factor in consideration of existing conditions or a potentially proposed FRM or other project in accordance with EC 1165-2-209, section 9.c.(1).

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to ensure the appropriate expertise is included on the review teams to assess the adequacy of cost estimates, construction schedules and contingencies. The ATR team will be comprised of individuals from outside POA that have not been involved in the development of the decision document and will be chosen based on expertise, experience, and/or skills. The RMO, in cooperation with the Project Delivery Team (PDT), and vertical team, will determine the final make-up of the ATR team.

### 3. STUDY INFORMATION

**a. Decision Document.** The Yakutat Watershed Feasibility Study, Alaska is scoped to produce a watershed plan, which is not a decision document that necessarily recommends a constructed solution. The purpose of the study is to document baseline conditions in the watershed and actions that improve use or management of the watershed. These measures could include restoration, enhancement, and prevention of watershed degradation. Should a viable structural alternative be identified, the decision document would address the necessary elements leading to approval of a Chief of Engineers' (HQ) approval and require appropriate Congressional authorization. The feasibility effort will contain environmental documentation to satisfy all National Environmental Policy Act (NEPA) and other statutory environmental requirements, including those particular to structural and nonstructural flood risk management measures, as applicable. It is anticipated that an Environmental Assessment will be the NEPA level of document compliance prepared, as appropriate.

**b. Study/Project Description.** The area of study extends from Yakutat northeast to the Tsiu River drainage and southeast to the East Alsek River drainage, including the saltwater environment out to the Yakutat trench or the City and Borough of Yakutat boundary, whichever is further from shore. The area encompasses multiple resources and habitats which provide opportunities for economic recovery and diversification, environmental mitigation and fisheries enhancements, and flooding mitigation, response, and recovery resulting from a future Hubbard Glacier damming of Russell Fiord and overflow of rising water into the Situk River via the Notch as shown in Figure 1. The City and Borough of Yakutat (CBY) is the non-Federal sponsor.

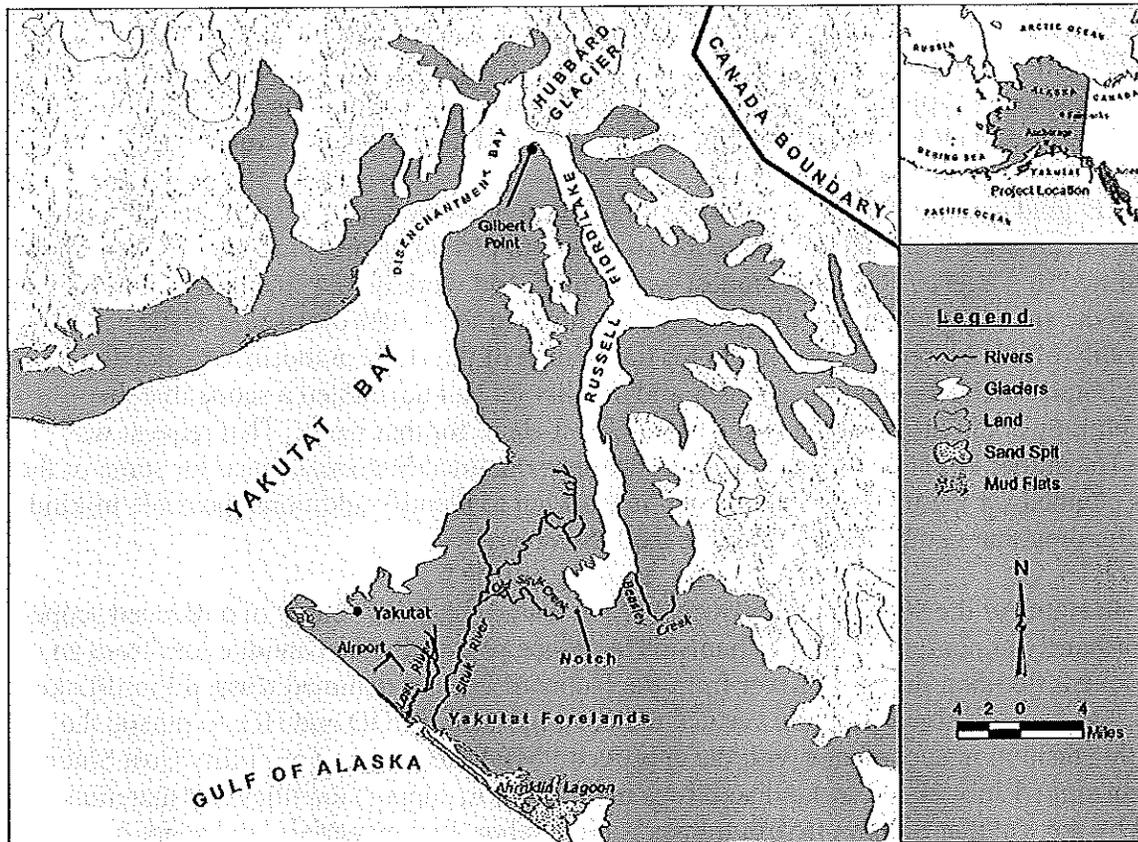


Figure 1 Location Vicinity Map

The purpose of the study is to identify and study potential responses to mitigate the loss and damages to resources from Hubbard Glacier blocking Russell Fiord and overflow into the Situk River. The output of this study could be a recommendation to implement a structural solution to address the flooding problem, a watershed plan with multiple actions, which may be accomplished and/or funded by various entities, or a combination of the two.

The authority for this study is provided by the “Rivers and Harbors in Alaska” study resolution adopted by the U.S. House of Representatives Committee on Public Works on December 2, 1970, which reads in part:

*“Resolved by the Committee on Public Works of the House of Representatives, United States, that the Board of Engineers for Rivers and Harbors is hereby requested to review the reports of the Chief of Engineers on Rivers and Harbors in Alaska, published as House Document Numbered 414, 83rd Congress, 2nd Session; . . . Northwestern Alaska, published as House Document Numbered 99, 86th Congress, 1st Session; . . . and other pertinent reports, with a view to determining whether any modifications of the recommendations contained therein are advisable at the present time.”*

Completion of the feasibility study, as well as preconstruction engineering and design, was approved by the Assistant Secretary of the Army (Civil Works) to be carried out at 100 percent Federal financing under the authority of Section 117 PL 108-447, on January 8, 2007. On March

11, 2009, Section 117 of the Energy and Water Development Appropriations Act for 2005, Division C of PL 108-447 was repealed by Section 117 of the Energy and Water Development and Related Agencies Appropriations Act, 2009 (Division C of the Omnibus Appropriations Act, 2009, PL 111-8), and all work on the remaining portions of the Study were stopped.

In June 2009 guidance was received on continuing the stopped work on a cost-shared basis. A request, in accordance with that guidance, for an ability to pay adjustment to the cost-share ratio, was submitted in August 2009. That request was denied, and work on the study did not move forward as the sponsor indicated it did not have the funding for a 50% cost-share of the scoped work. In July of 2011 a request was made for the change of the study authority to a Section 729 Watershed Study authority, and the sponsor and the district had negotiated a scope that the sponsor felt they could afford at the required 25% cost-share for that work. That request was denied in December 2011. At this time the sponsor has obtained State assistance for some of the activities planned for the feasibility study, and is working to identify additional possible in-kind and cash funding that can be used to provide the local share.

The present status of the study is as a 50%/50% cost-shared feasibility study of a reduced scope looking primarily at non-structural mechanisms to reduce physical and economic loss from an overflow event flooding the Situk River from the Hubbard Glacier dammed Russell Fiord/Lake. Guidance has been received from the vertical team, comprised of POD and HQ, to pursue the study in this fashion in accordance with the approved PMP based on the Feasibility Cost Share Agreement signed July 2012. In-kind activities include labor, support facilities and materials provided by the Yakutat Salmon Board, transportation, labor, fuel, materials, and support facilities provided by the City and Borough of Yakutat, labor and facilities, data gathering, laboratory work, and agency assistance by the State of Alaska and sub-agencies, access permits, labor, facilities and data gathering by Sealaska and Yak Tat Kwaan Alaska Native Corporations, and data analyses and laboratory support by the University of Alaska. The support and costs are subject to change due to change of field conditions, scope changes, or market conditions. Likewise, an overall project cost or range of cost for a recommended plan is not available because of the watershed planning nature of the study.

The alternative actions being analyzed are presented in the list that follows, subject to modification, and contingent on funding and Sponsor support.

**(1) No Action.** If no further action is taken, the Hubbard Glacier may or may not isolate Russell Fiord (forming Russell Lake) for a sufficient duration to cause flooding over the Russell Fiord terminal moraine and into the Situk River. If such a flood occurred portions of the Yakutat Airport could be inundated. The volumes and velocities of water entering the Situk and other adjacent watersheds and subsequent damages to improved property, infrastructure, public utilities, and fisheries resources are indeterminable without further study.

**(2) Determine Probable Impacts of an Overflow Flood.** Probable structural, biological, and economic impacts of an overflow flood may be estimated. The natural rate of recovery of Situk River resources, and the Yakutat economy dependent upon them, may also be estimated. Without any additional alternatives completed as part of this watershed study, Yakutat will need to pursue other means in order to mitigate the identified potential damages.

**(3) Hydraulic Model of Yakutat Foreland.** A hydraulic model, such as Hydrologic Engineering Center's River Analysis System (HEC-RAS) model, may be used to predict likely areas of inundation along with water velocities and depths. This will assist with identifying what sort of protection structures, if any, are warranted.

**(4) Protection of the Situk River Watershed.** Structural and non-structural measures to protect the Situk River watershed may be considered. Preliminary assessments of alternatives made in the reconnaissance phase of this study will be reviewed and updated, where appropriate. Alternatives considered need not be constrained to those considered in the reconnaissance report.

**(5) Contingency Plan for Protection of the Yakutat Airport.** Based upon hydraulic modeling results and consultation with Alaska Department of Transportation and Public Facilities and Alaska Department of Homeland Security and Emergency Preparedness both structural and non-structural means to protect the Yakutat Airport may be assessed. A contingency plan to protect the airport may be developed. Such a contingency plan could be enacted once a certain criteria increasing the probability of an overflow flood occurring are met.

**(6) Overflow Flood Early Warning System.** A near-real time monitoring station of the tidewater terminus of Hubbard Glacier has been established as part of this study. A commitment of continued funding and an entity responsible for continued maintenance would allow this monitoring station to operate beyond the life of this particular study. Continued operation of the Hubbard Glacier monitoring station combined with a Hubbard Lake water elevation gage could serve as an early warning system. Such a system would be essential to determining when any overflow flood contingency plans should be executed.

**(7) Yakutat Economic Diversification Analysis Report.** Means by which the community of Yakutat may reduce their economic dependence upon the resources of the Situk River may be investigated and summarized in a report. While information included in such a report will address the feasibility of identified diversification measures, it will ultimately be the community's decision and responsibility to pursue any of the options.

**(8) Additional Watershed Studies.** The economic diversification analysis may identify alternate watersheds within which a portion of the Yakutat economy may be redirected. A subsequent watershed study to develop a watershed management plan for the identified alternate watershed(s) may be warranted to guide the sustainable development of such watersheds.

**c. Factors Affecting the Scope and Level of Review.** The following factors may affect the project study and level of review:

- There is risk that an overflow event of Russell Lake into the Old Situk channel would occur before a complete analysis of flood damage reduction alternatives and mitigation responses to reduce potential impacts to life, property, and resources is completed. There have been two events since 1986 where Hubbard Glacier has advanced and isolated Russell Fiord effectively turning the fiord into a temporary lake; as depicted in Figure 2. The project study and ensuing review would be affected should a closure event occur during the study effort.

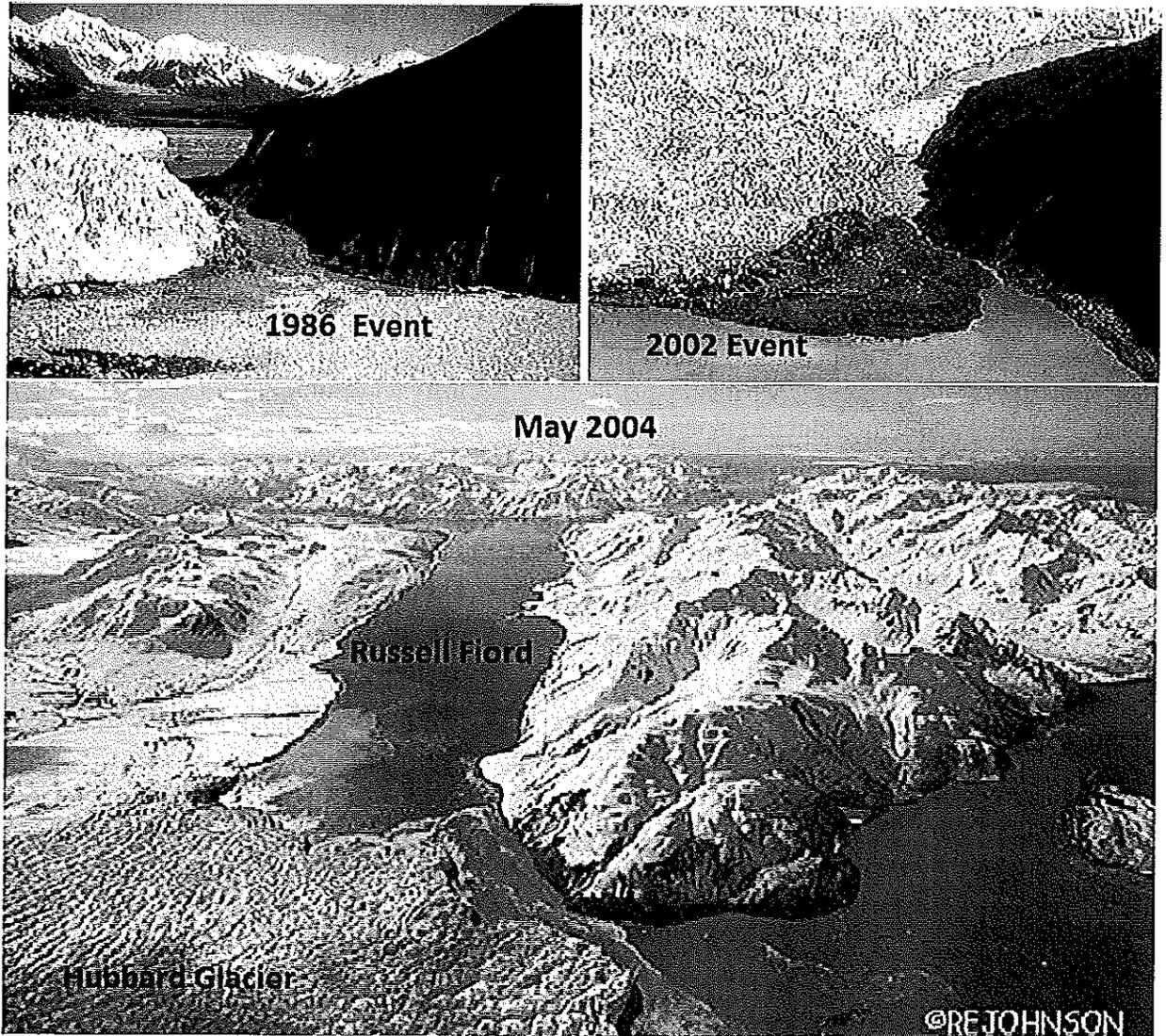


Figure 2 Closure Events

- The lack of accurate glacial predictions including the stability of ice dams and the monitoring of potential overflow events. There is a desire for extended monitoring and public information which may drive the study process to accumulating more data.
- Accurate hydraulic models of the potential overflow flood events are lacking and may be difficult and expensive to produce.
- There is no request by the Governor of Alaska or of an affected state for a peer review by independent experts for this effort.
- The study is not likely to involve significant public dispute as to the size, nature, or effects of the project because of the level of effort currently scoped. Scheduled tasks involve data collection/monitoring activities associated with various outputs such as assessing Hubbard

Glacier movement and Salmon genetics. Public dispute is not anticipated on the data that will be collected.

- Likely project benefits anticipated are directly related to flood management response for event consequences. These are categorized as environmental, economic, and infrastructure losses should flooding occur. It is not likely to involve items of significant public dispute.

- As presented in the Water Resources Development Act (WRDA) of 1986 Section 905(b) Reconnaissance Analysis, flooding may occur should the Hubbard Glacier advance at Gilbert Point. This would turn existing Russell Fiord into Russell Lake susceptible to rising water levels with ice and snow melt and precipitation. Should the lake rise above an elevation of 132 feet mean sea level, it would spill over the southern terminal moraine into the historic channel of the Old Situk River and then into the Situk River. The Russell Lake discharge would significantly exceed the capacity of the Situk River channel and disrupt the river's fisheries. Addressing response mechanisms to ensure planning efforts are in place are proposed as a major portion of the current watershed study effort. Although the impact details of an overflow event are unknown at this time, the direct life safety risk is minimal, if any. The total population of Yakutat (680) is not at risk and is outside the flow path. Flood impacts would mainly involve maintained gravel roads that provide community access for commercial, subsistence, and recreational economic opportunities of the river channels. There would also be environmental and economic damages to the fishery resources themselves. The District Chief of Engineering concurs there is no significant life risk since no permanently habited dwellings would be inundated. In addition, were this event to occur, it would develop slowly thus allowing significant time to provide warning and prepare any emergency measures needed to mitigate event impacts and risk.

- The scope and technical complexity for this study and feasibility report is not expected to be novel, controversial, or precedent setting for much of the study. However, the study does encompass the field of glaciology to determine potential response plans for resultant flooding and the economics of diversification (initiation of new business areas) for Yakutat.

**d. In-Kind Contributions.** Products and analyses provided by the non-Federal sponsor as in-kind services are subject to DQC, ATR, and IEPR. The in-kind products and services to be provided by the non-Federal sponsor are described in the PMP. Products submitted by the non-Federal sponsor will be reviewed in accordance with EC 1165-2-209.

#### **4. DISTRICT QUALITY CONTROL (DQC) AND DOCUMENTATION**

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The DQC will be managed by POA in accordance with ER 1110-1-12, POD and POA Quality Management Plans, and all other relevant guidance. The DQC will be documented using DrChecks and made available to the ATR team at each review. Per EC1165-2-209, Paragraph 8.d., for each ATR event, the ATR team will examine relevant DQC records and provide written comment in the ATR report as to the apparent adequacy of the

DQC effort. The DQC team roster will be included in Attachment 1 when the team members are identified.

**5. AGENCY TECHNICAL REVIEW (ATR)**

ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.). The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within the U.S. Army Corps of Engineers (USACE) by the designated RMO and is conducted by a qualified team from outside POA that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside POD.

**a. Products to Undergo ATR.** It is anticipated that the milestone activities will be a series of In-Progress Reviews (IPRs) working closely with an established ATR team as well as full vertical team (POA, POD, HQUSACE) as appropriate to identify applicable products for ATR/IEPR. The first IPR is anticipated during the first quarter of FY2014 after data collection and initiation of study tasks are in place.

**b. Required ATR Team Expertise.** The appropriate RMO, in cooperation with the PDT, vertical team, and other appropriate centers of expertise, will determine the final make-up of the ATR team. The following table provides the types of disciplines known at this time for the ATR team with expertise requirements.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
Hydraulic Engineering	The hydraulic engineering reviewer will be an expert in the field of hydraulics and have a thorough understanding of non-structural solutions involving flood warning systems and flood proofing, etc and/or computer modeling techniques that will be used such as HEC-RAS.
Environmental Resources	The Environmentalist should have 5-10 years of experience and understand the requirements for and have experience with NEPA documentation. Explicit knowledge and experience working with Alaska and Northwest Pacific coastal species; especially salmon.

Planning	The Planning reviewer should be a senior water resources planner with experience in plan formulation with 10 years experience and a broad civil works experience in USACE CW program.
Glaciology	Appropriate expert with greater than 10 years experience with knowledge of monitoring glacial movement and interpreting collections of data for defining potential growth and recession timing and repeatability algorithms for predictive analysis.

The ATR team members for this study and a brief description of their credentials will be added in Attachment 1 once the team is formed.

**c. Documentation of ATR.** DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

(1) The review concern – identify the product’s information deficiency or incorrect application of policy, guidance, or procedures;

(2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not been properly followed;

(3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and

(4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist.

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the POA, RMO, POD, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date for the draft report and final report. A sample Statement of Technical Review is included in Attachment 2.

## **6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)**

IEPR may be required for decision documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. There are two types of IEPR:

- Type I IEPR. Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-209.

- **Type II IEPR.** Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

**a. Decision on IEPR.** A decision on the implementation of IEPR is premature at this time. This feasibility effort does not necessarily culminate with a decision document; neither is a construction recommendation likely. If needed, the decision to go forward with implementing IEPR will be made with the assistance of the vertical team (involving POA, POD, PCX, and HQUSACE) as the PDT obtains data and is ready to assimilate products. It is plausible that IEPR may be beneficial in addressing the glaciology as well as the flood risk management preparedness aspects of the study. This Review Plan will be revised once the need for an IEPR is determined in accordance with EC 1165-2-209. If Type I IEPR is determined to not be appropriate, an exclusion from Type I IEPR will be requested from the Director of Civil Works. An in-progress review decision point to determine IEPR is scheduled for the 1<sup>st</sup> Quarter of FY2014; tentative November 13, 2013.

**b. Products to Undergo Type I IEPR.** Unknown at this time. Depending on the complexity and magnitude of the study, IEPR could be performed for key interim technical products and major milestone documents.

**c. Required Type I IEPR Panel Expertise.** Not-Applicable; because it is not known at this time whether IEPR will be used. Conceivably, panel members not affiliated with the Corps of Engineers, such as academia with respect to the field of glaciology would be beneficial to the effort should it be determined that IEPR is necessary. The IEPR panel members for this study and a brief description of their credentials will be added in Attachment 1 if an IEPR is conducted.

**d. Documentation of Type I IEPR.** Not-Applicable; because it is not known at this time whether IEPR will be used; however, the documentation process is presented should the determination be made to use IEPR. The IEPR panel will be selected and managed by an Outside Eligible Organization (OEO) per EC 1165-2-209, Appendix D. Panel comments will be compiled by the OEO and should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 5.c. above. The OEO will prepare a final Review Report that will accompany the publication of the final decision document and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;

- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The final Review Report will be submitted by the OEO no later than 60 days following the close of the public comment period for the draft decision document. USACE shall consider all recommendations contained in the Review Report and prepare a written response for all recommendations adopted or not adopted. The final decision document will summarize the Review Report and USACE response. The Review Report and USACE response will be made available to the public, including through electronic means on the internet.

## **7. POLICY AND LEGAL COMPLIANCE REVIEW**

All decision documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the POD Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

## **8. COST ENGINEERING DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION**

All decision documents shall be coordinated with the Cost Engineering DX, located in the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and Type I IEPR team (if required) and in the development of the review charge(s). The DX will also provide the Cost Engineering DX certification. The RMO is responsible for coordination with the Cost Engineering DX.

## **9. MODEL CERTIFICATION AND APPROVAL**

**a. Planning Models.** EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data is still the responsibility of the users and is

subject to DQC, ATR, and IEPR (if required).

No planning models are anticipated to be used in the development of the decision document under the current study scope. The decision for utilization of planning models will be evaluated as part of the initial in-progress review and updated accordingly. Descriptions of any planning models subsequently identified for use in this study will be included in this section.

**b. Engineering Models.** EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

The following engineering models are anticipated to be used in the development of the decision document, if warranted:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
HEC-RAS 4.0 (River Analysis System)	The HEC-RAS program provides the capability to perform one-dimensional steady and unsteady flow river hydraulics calculations. The program will be used for steady flow analysis to evaluate the future without- and with-project conditions. HEC-RAS has been run with existing Light Detection and Ranging (LIDAR) survey data for the 100 yr-flood event assuming stable closure of Russell Fiord by Hubbard Glacier. The LIDAR survey has not been verified with a ground survey. A ground survey will be accomplished in order to define infrastructure potentially affected by glacial flooding and verify the accuracy of the LIDAR survey which serves as the basis for the HEC-RAS model. If necessary, cross-sections will be adjusted and HEC-RAS modeling will be rerun so that new flood inundation mapping can be prepared.	Hydraulics, Hydrology, and Coastal Engineering Community of Practice (HH&C CoP) Preferred Model

## 10. REVIEW SCHEDULES AND COSTS

**a. ATR Schedule and Cost.** Implementation of ATR will begin with this document. Gene Sturm, Omaha District, has been identified to review and assist in coordinating further ATR requirements. Initial funding of \$3000 has been provided for his effort. The ATR for this study will be accomplished in accordance with the cost and schedule in the Project Management Plan. As of the approval date of this Review Plan, the ATR of the draft report is scheduled for FY2014. Interim technical product reviews or additional POD required reviews are to be

determined in coordination with the primary PCX, the Cost Engineering DX, and/or the RMC as applicable. The ATR schedule and budget will include participation of the ATR Lead in milestone conferences and the Civil Works Review Board (CWRB) meeting (if required for the study) to address the ATR process and any significant and/or unresolved ATR concerns. It is anticipated that the milestone activities will be a series of In-Progress Reviews (IPRs) working closely with an established ATR team as well as the full vertical team (POA, POD, HQUSACE) as appropriate to identify applicable products for ATR/IEPR. The first IPR is anticipated during the first quarter of FY2014 after data collection and initiation of study tasks are in place.

**b. Type I IEPR Schedule and Cost.** Schedule and cost for IEPR to be determined. If Type I IEPR is conducted for this study, the estimated schedule for all IEPR work including review of the entire decision document package (usually at the draft report stage) and any interim reviews will be inserted. At minimum, estimated dates for the next milestone review would be provided as well as estimated cost of the IEPR effort. Coordination with the primary PCX or the RMC will occur for this determination. For decision documents presented to the CWRB, IEPR comments and responses will be discussed at the CWRB meeting. The IEPR schedule and budget would include participation of an IEPR panel member and/or OEO representative at the CWRB.

**c. Model Certification/Approval Schedule and Cost.** Models anticipated for this study effort have been designated as preferred.

## **11. PUBLIC PARTICIPATION**

Being a watershed planning effort, development of a decision document may not occur. There will be, however, routine engagement and participation of many stakeholders as well as the public throughout the study activities. The PDT will conduct several different types of meetings to include scoping and public meetings to obtain and disseminate information. These meetings will be advertised in appropriate local media such as radio, TV, newspaper, notices, and flyers. Minutes will be kept. Reviewers would be provided all comments. It is anticipated that ATR and IEPR activities also will be made available to the public as appropriate.

## **12. REVIEW PLAN APPROVAL AND UPDATES**

The POD Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving POA, POD, RMO, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. POA is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last POD Commander approval are documented in Attachment 3. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the POD Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commander's approval memorandum, will be posted on POA's webpage. The latest Review Plan will also be provided to the RMO and POD.

### **13. REVIEW PLAN POINTS OF CONTACT**

Public questions and/or comments on this review plan can be directed to the following points of contact:

- Mr. David Williams, Alaska District (POA-PM-C), Project Manager, at (907) 753-5621
- Mr. Ronnie Barcak, Alaska District (POA-PM-PL), Planner, at (907) 753-5755
- Mr. Eric Thaut, FRM-PCX Deputy Director, at (415) 503-6852
- Mr. Russell Iwamiura, Pacific Ocean Division (CEPOD-PDC), Senior Economist, at (808) 835-4625

ATTACHMENT 1: TEAM ROSTERS

**Project Delivery Team (PDT)**

NAME	AFFILIATION
Dave Williams Project Manager	USACE, Alaska District
Ronnie Barcak Plan Formulator	USACE, Alaska District
Bill Lucey Yakutat City/Borough Planner	City and Borough of Yakutat
Amanda Shearer Tribal Liaison	USACE, Alaska District
Chris Hoffman Biologist	USACE, Alaska District
Merlin Peterson Hydraulic Engineer	USACE, Alaska District
John Rajek Geotechnical Engineer	USACE, Alaska District
Dave Finnegan Remote Sensing Expert	USACE, CRREL
Dan Lawson Glaciologist	USACE, CRREL
Lorraine Cordova Economist	USACE, Alaska District
Al Arruda Cost Engineer	USACE, Alaska District
Erin Laughlin Archaeologist	USACE, Alaska District
Carmen Osmond Realty Specialist	USACE, Alaska District
Donald Tybus Value Engineering Officer	USACE, Alaska District
Robert Stolzman Attorney	USACE, Alaska District

**ATR Review Coordinator:** Gene Sturm, USACE, Omaha District

**ATR Team:** TBD

### Vertical Team

NAME	AFFILIATION
Linda Hihara-Endo CW Planning Team Leader	USACE, Pacific Ocean Division CEPOD-PDC
Russell Iwamura Economist	USACE, Pacific Ocean Division CEPOD-PDC
David Lau CW Programs Team Leader	USACE, Pacific Ocean Division CEPOD-PDC
Andrew Miller POD-RIT CW Planner	USACE, Headquarters CEMP-POD
Gene Sturm FRM-PCX Representative	USACE Omaha District

## ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION DOCUMENTS

### COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the <type of product> for <project name and location>. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks<sup>sm</sup>.

SIGNATURE

Name

ATR Team Leader

Office Symbol/Company

\_\_\_\_\_  
Date

SIGNATURE

Name

Project Manager

Office Symbol

\_\_\_\_\_  
Date

SIGNATURE

Name

Architect Engineer Project Manager<sup>1</sup>

Company, location

\_\_\_\_\_  
Date

SIGNATURE

Name

Review Management Office Representative

Office Symbol

\_\_\_\_\_  
Date

### CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: Describe the major technical concerns and their resolution.

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

SIGNATURE

Name

Chief, Engineering Division

Office Symbol

\_\_\_\_\_  
Date

SIGNATURE

Name

Chief, Planning Division

Office Symbol

\_\_\_\_\_  
Date

<sup>1</sup> Only needed if some portion of the ATR was contracted

**ATTACHMENT 3: REVIEW PLAN REVISIONS**

<b>Revision Date</b>	<b>Description of Change</b>	<b>Page / Paragraph Number</b>

#### ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

<u>Term</u>	<u>Definition</u>
AFB	Alternative Formulation Briefing
ATR	Agency Technical Review
CBY	City and Borough of Yakutat
CDT	Carbon Dioxide Temperature
CENWO	Corps of Engineers, Omaha District
CEPOA	Corps of Engineers, Alaska District
CEPOD	Corps of Engineers, Pacific Ocean Division
CRREL	Cold Regions Research and Engineering Laboratory, USACE
CWRB	Civil Works Review Board
DQC	District Quality Control/Quality Assurance
DX	Directory of Expertise
EC	Engineer Circular
ER	Engineer Regulation
FSM	Feasibility Scoping Meeting
HEC-RAS	Hydrologic Engineering Center's River Analysis System
Home District/MS C	The District or MSC responsible for the preparation of the decision document
HH&C CoP	Hydraulics, Hydrology, and Coastal Engineering Community of Practice
HQ/HQUSAC E	Headquarters, U.S. Army Corps of Engineers
IEPR	Independent External Peer Review
LIDAR	Light Detection and Ranging
MSC	Major Subordinate Command
NEPA	National Environmental Policy Act
OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
OEO	Outside Eligible Organization
PCX	Planning Center of Expertise
PDT	Project Delivery Team
PMP	Project Management Plan
PL	Public Law
QMP	Quality Management Plan
RMC	Risk Management Center
RMO	Review Management Organization
SAR	Safety Assurance Review
USACE	U.S. Army Corps of Engineers